



# Film Capacitors - Power Factor Correction

## Capacitor Contactors

**Series/Type:** B44066S\*\*\*\* J110/J230

**Ordering code:** B44066S\*\*\* J\*\*\*

**Date:** February 2018

**Version:** 12

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### Characteristics

- Excellent damping of inrush current
- Improved power quality (e.g. avoidance of voltage sags)
- Longer useful life of main contacts of capacitor contactor
- Soft switching of capacitor and thus longer useful life
- Enhanced mean life expectancy
- Reduced ohmic losses
- Easy access for cable connection
- AC6b utilization category for switching 3-phase capacitors
- Approvals
  - cUL approval
  - CCC (China Compulsory Certification)



B44066S...J230/J110



B44066S9010J230



B44066S1810J230/J110

Features	
Resistors	Tamper-proof and protected
Leading contacts	With wiper function
Pre-contacts	Snap function
Aux-contacts	For all types

Type / Main contacts		B44066S1810...	B44066S2410...	B44066S3210...	B44066S5010...
Capacitor power at 50 °C ■ 380 ... 400 V ■ 415 ... 440 V ■ 660 ... 690 V	kvar	0 ... 12.5 0 ... 13 0 ... 20	10 ... 20 10.5 ... 22 17 ... 33	10 ... 25 10.5 ... 27 17 ... 41	20 ... 33.3 23 ... 36 36 ... 55
Capacitor power at 60 °C ■ 380 ... 400 V ■ 415 ... 440 V ■ 660 ... 690 V	kvar	0 ... 12.5 0 ... 13 0 ... 20	10 ... 20 10.5 ... 22 17 ... 33	10 ... 25 10.5 ... 27 17 ... 41	20 ... 33.3 23 ... 36 36 ... 55
Coil operating voltage at 50 Hz <sup>1)</sup> : ■ Type ... 230 ■ Type ... 110 ■ Type ... 400	V AC	220 ... 240 110 N/A	220 ... 240 110 N/A	220 ... 240 110 380 ... 415	220 ... 240 On request N/A
Coil operating voltage at 60 Hz <sup>1)</sup> : ■ Type ... 230 ■ Type ... 110 ■ Type ... 400	V AC	230 ... 264 110 ... 120 N/A	230 ... 264 110 ... 120 N/A	230 ... 264 110 ... 120 400 ... 440	230 ... 264 On request N/A
Rated op. current AC6b at 50/60 Hz ■ 50 °C ■ 60 °C	A	0 ... 18 0 ... 18	14 ... 28 14 ... 28	14 ... 36 14 ... 36	30 ... 48 30 ... 48
Power loss contactor at max. rated capacitor current	W	4.1	5.7	7.5	12.6
Rated insulation voltage	V AC	690 <sup>1)</sup>	690 <sup>1)</sup>	690 <sup>1)</sup>	690 <sup>1)</sup>
Max. frequency of operations:	1/h	120	120	120	120
Contact life: ■ without reactors ■ with reactors	Million operations	0.25 0.40	0.15 0.30	0.15 0.30	0.15 0.30
Cable cross section for contactors without thermal overload relay 1 cable per clamp Main connector ■ Solid or stranded ■ Flexible ■ Flexible with multicore cable end	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	0.75 – 6 1 – 4 0.75 – 4	1.5 – 25 2.5 – 16 1.5 – 16	1.5 – 25 2.5 – 16 1.5 – 16	4 – 50 10 – 35 6 – 35
2 cables per clamp ■ Solid or stranded	mm <sup>2</sup>	6+(1-6) / 4+(0.75-4) 2.5+(0.75-2.5) / 1.5+(0.75-1.5)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	50+4 / 35+6 / 25+(6-16) 16+(6-16) / 10+(6-16)
■ Flexible	mm <sup>2</sup>	6+(1.5-6) / 4+(1-4) 2.5+(0.75-2.5) / 1.5+(0.75-1.5)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	16+(2.5-6) / 10+(4-10) 6+(4-6) / 4+(2.5-4)	50+(4-10) / 35+(4-16) 25+(4-25) / 16+(4-16)
Cables per clamp		2	2	2	2

1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $V_{imp} = 8 \text{ kV}$ .  
Data for other conditions on request.

2) Operating range of magnet-coils  $0.85 V_s$  (min. value of rated control voltage) up to  $1.1 \cdot V_s$  (max. value of rated control voltage).

Type/Main contacts		B44066S1810...	B44066S2410...	B44066S3210...	B44066S5010...
For main connector		18 – 10	16 – 10	16 – 10	12 – 10
■ Solid AWG		18 – 10	14 – 4	14 – 4	10 – 0
■ Flexible AWG		2	1	1	1
Cables per clamp		2	1	1	1
■ Solid AWG	mm <sup>2</sup>	10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	10+(16-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	10+(12-10) / 12+12
■ Flexible AWG	mm <sup>2</sup>	10+(14-10) / 12+(18-12) 14+(18-14) / 16+(18-16)	4+(18-12) / 6+(18-8) 8+(18-8) / 10+(18-12)	4+(18-12) / 6+(18-8) 8+(18-8) / 10+(18-12)	1+(12-10) / 2+(8-12) 3+(12-8) / 4+(10-6)
Cables per clamp		2	2	2	2
Weight including auxiliary contact:	kg	0.37	0.67	0.67	1.03
Fuses gL (gG) from / to	A	35 / 63	50 / 80	63 / 100	80 / 160

**Auxiliary contacts**

Normal Open (NO)		1	1	1	1
Rated insulation voltage	V AC	690 <sup>2)</sup>	690 <sup>2)</sup>	690 <sup>2)</sup>	690 <sup>2)</sup>
Rated operational current AC15 at 230 V / 400 V	A	3 / 2	3 / 2	3 / 2	3 / 2
Rated operational current AC1 at 690 V	A	10	10	10	10

1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $V_{imp} = 8$  kV. Data for other conditions on request.

2) Operating range of magnet-coils  $0.85 V_s$  (min. value of rated control voltage) up to  $1.1 \cdot V_s$  (max. value of rated control voltage).

Type/Main contacts		B44066S6210...	B44066S7410...	B44066S9010...	B44066S9910...
Capacitor power at 50 °C ■ 380 ... 400 V ■ 415 ... 440 V ■ 660 ... 690 V	kvar	20 ... 50 23 ... 53 36 ... 82	20 ... 75 23 ... 75 36 ... 120	33...80 36...82 57...120	33 ... 100 36 ... 103 57 ... 148
Capacitor power at 60 °C ■ 380 ... 400 V ■ 415 ... 440 V ■ 660 ... 690 V	kvar	20 ... 50 23 ... 53 36 ... 82	20 ... 60 23 ... 64 36 ... 100	33...75 36...77 57...120	33 ... 90 36 ... 93 57 ... 148
Coil operating voltage at 50 Hz1): ■ Type ... 230 ■ Type ... 110 ■ Type ... 400	V AC	220 ... 240 110 380 ... 415	220 ... 240 110 N/A	220 ... 240 On request N/A	220 ... 240 On request N/A
Coil operating voltage at 60 Hz1): ■ Type ... 230 ■ Type ... 110 ■ Type ... 400	V AC	230 ... 264 110 ... 120 400 ... 440	230 ... 264 110 ... 120 N/A	277 On request N/A	277 On request N/A
Rated op. current AC6b at 50/60 Hz ■ 50 °C ■ 60 °C	A	30 ... 72 30 ... 72	30 ... 108 30 ... 87	50 ... 115 50 ... 108	50 ... 144 50 ... 130
Power loss contactor at max. rated capacitor current	W	21	38.7	29	36
Rated insulation voltage	V AC	690 <sup>1)</sup>	690 <sup>1)</sup>	1000 <sup>1)</sup>	1000 <sup>1)</sup>
Max. frequency of operations:	1/h	120	80	80	80
Contact life: ■ without reactors ■ with reactors	Million operations	0.15 0.30	0.12 0.20	0.12 0.20	0.12 0.20
Cable cross section for contactors without thermal overload relay; 1 cable per clamp Main connector ■ Solid or stranded ■ Flexible ■ Flexible with multicore cable end	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	4 – 50 10 – 35 6 – 35	4 – 50 10 – 35 6 – 35		
2 cables per clamp ■ Solid or stranded	mm <sup>2</sup>	50+4 / 35+6 / 25+(6-16) / 16+(6-16) / 10+(6-16)	50+4 / 35+6 / 25+(6-16) 16+(6-16) / 10+(6-16)	Top      Below 0.5 – 95 +10    120	Top      Below 0.5 – 95 +10    120
■ Flexible	mm <sup>2</sup>	50+(4-10) / 35+(4-16) / 25+(4-25) / 16+(4-16)	50+(4-10) / 35+(4-16) / 25+(4-25) / 16+(4-16)	0.5 – 70+10 – 95	0.5 – 70+10 – 95
Cables per clamp		2	2	1+1	1+1
For main connector ■ Solid AWG ■ Flexible AWG Cables per clamp ■ Solid AWG ■ Flexible AWG	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>	12 – 10 10 – 0 1 10+(12-10) / 12+12 1+(12-10) / 2+(8-12) / 3+(12-8) / 4+(10-6)	12 – 10 10 – 0 1 10+(12-10) / 12+12 1+(12-10) / 2+(8-12) / 3+(12-8) / 4+(10-6)	Top      Below 18 – 10      -- 18 – 3/0    8 – 4/0	Top      Below 18 – 10      -- 18 – 3/0    8 – 4/0
Cables per clamp		2	2	1 + 1	1 + 1

1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $V_{imp} = 8 \text{ kV}$ .  
Data for other conditions on request.

2) Operating range of magnet-coils  $0.85 V_s$  (min. value of rated control voltage) up to  $1.1 \cdot V_s$  (max. value of rated control voltage).

Type/Main contacts		B44066S6210...	B44066S7410...	B44066S9010...	B44066S9910...
Weight including auxiliary contact: ■ Type ...J...	kg	1.03	1.03	2.3	2.33
Fuses gL (gG) from / to	A	125/160	160/200	160/200	160/250
<b>Auxiliary contacts</b>					
Normal Open (NO)		1	1	1	1
Rated insulation voltage	V AC	690 <sup>2)</sup>	690 <sup>2)</sup>	690 <sup>2)</sup>	690 <sup>2)</sup>
Rated operational current AC15 at 230 V / 400 V	A	3 / 2	3 / 2	3 / 2	3 / 2
Rated operational current AC1 at 690 V	A	10	10	10	10

1) Suitable at 690 V for: earthed-neutral systems, overvoltage category I to IV, pollution degree 3 (standard-industry):  $V_{imp} = 8$  kV.  
Data for other conditions on request.

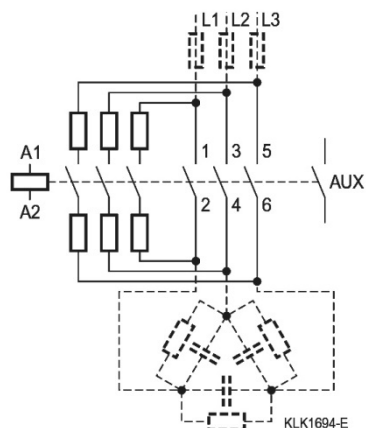
2) Operating range of magnet-coils  $0.85 V_s$  (min. value of rated control voltage) up to  $1.1 \cdot V_s$  (max. value of rated control voltage).

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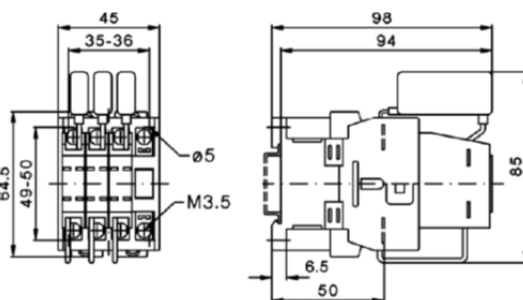
**Connection diagram for all types B44066S...J...**

B44066S1810J230, B44066S9010J230 and B44066S9910J230 with resistors inside housing.

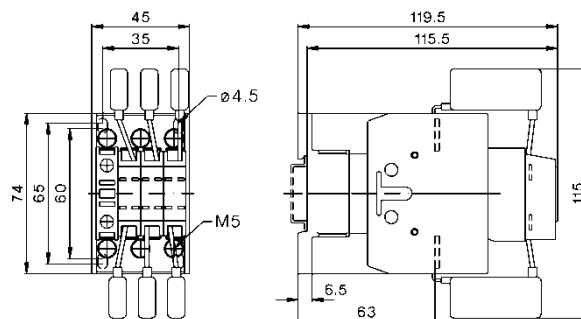


**Dimensional drawings**

B44066S1810J230, B44066S1810J110  
with wires on the bottom only

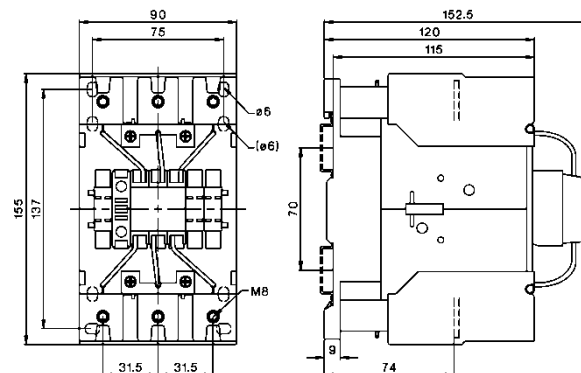
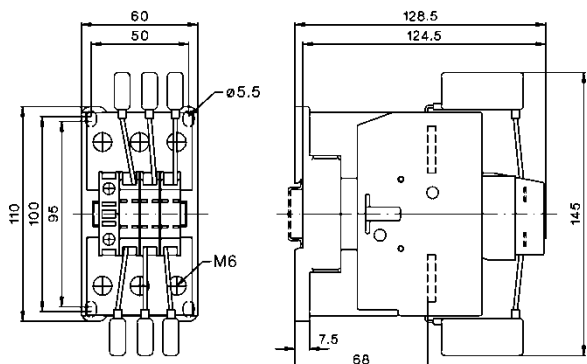


B44066S2410J230, B44066S3210J230  
B44066S2410J110, B44066S3210J110



B44066S5010J230, B44066S6210J230,  
B44066S6210J110, B44066S7410J230,  
B44066S7410J110

B44066S9010J230, B44066S9910J230



**Cautions and warnings**

In case auxiliary contacts are used for switching of discharge resistors (not in accordance with IEC 60831 standard), make sure that the current of the discharge resistors is not higher than the rated current of the auxiliary contacts.

**Mounting instructions**

In the area of capacitor switching contactors, difficultly inflammable and self-extinguishing materials may be used only, because abnormal temperatures within the area of the resistance spirals cannot be excluded.

Note

For detailed information about PFC key components and cautions, refer to the latest version of EPCOS PFC Product Profile.

Please refer to "Installation and Maintenance Instructions for Capacitor Contactors", available in the Internet. Important: Please note that the „General Safety Recommendations for Power Capacitors“ by ZVEI (German Electrical and Electronic Manufacturers' Association (ZVEI) have to be observed in addition to the caution guidelines stated in the data sheet (Internet: [www.epcos.com/pfc](http://www.epcos.com/pfc)).

FAILURE TO FOLLOW CAUTIONS MAY RESULT, WORST CASE, IN PREMATURE FAILURES OR PHYSICAL INJURY.

Note

For detailed information about PFC capacitors and cautions, refer to the latest version of EPCOS PFC Product Profile.



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